

Calamagrostis Langsdorfii, Trin., is abundant just above timberline. It also grows on Mt. Bigelow.

Aspidium spinulosum, Swartz, var. *dilatatum*, Hook. Common in rich mountain woods throughout the county. There seems to be a rather definite line about 1200 feet, above which it is found.

Lycopodium annotinum, L., var. *pungens*, Spring, is very common, and seems to shade into the type. It also occurs on the other mountains of the county.

CHELMSFORD, MASSACHUSETTS.

FOLIAR OUTGROWTHS FROM THE SURFACE OF THE LEAF OF ARISTOLOCHIA SIPHO.

R. G. LEAVITT.

Miss Katharine P. Loring has sent to the Gray Herbarium from Pride's Crossing, Massachusetts, a leaf of *Aristolochia Sipho* upon the under surface of which curious lamellar expansions have been

formed. (Fig. 1). These unusual structures are stated by Miss Loring to have originated in the healing of wounds. She says: "I have watched it [the leaf] all summer. In the spring, when it was still folded, a fly netting dropped on it on the window sill, crushing it and splitting the leaf in several places. I thought it would wither; instead it mended itself as you see."

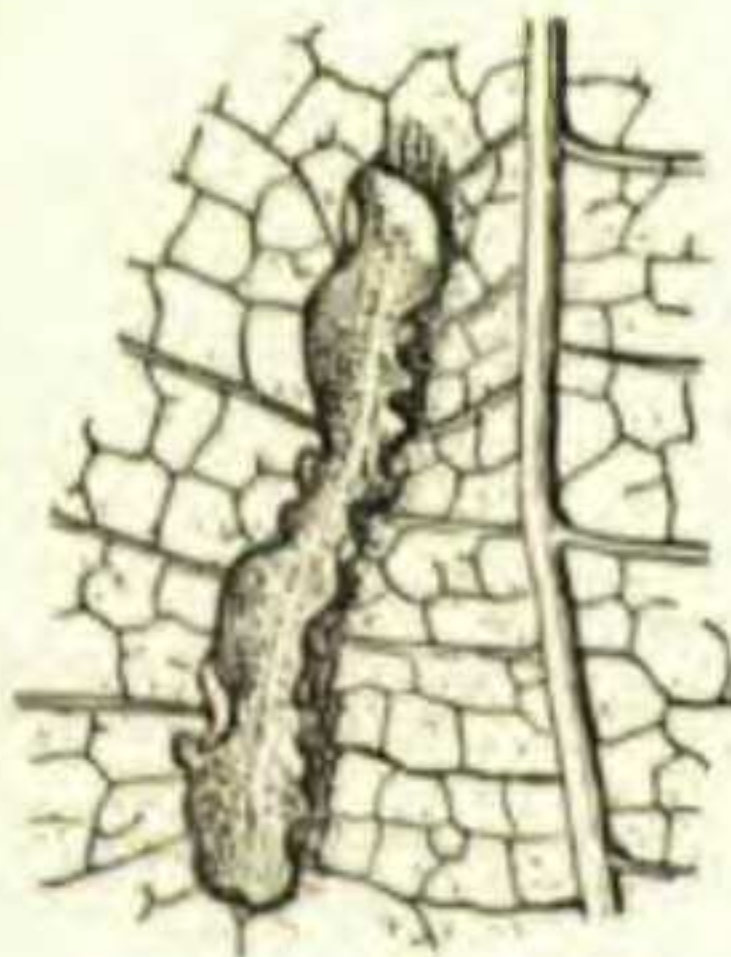


Fig. 1

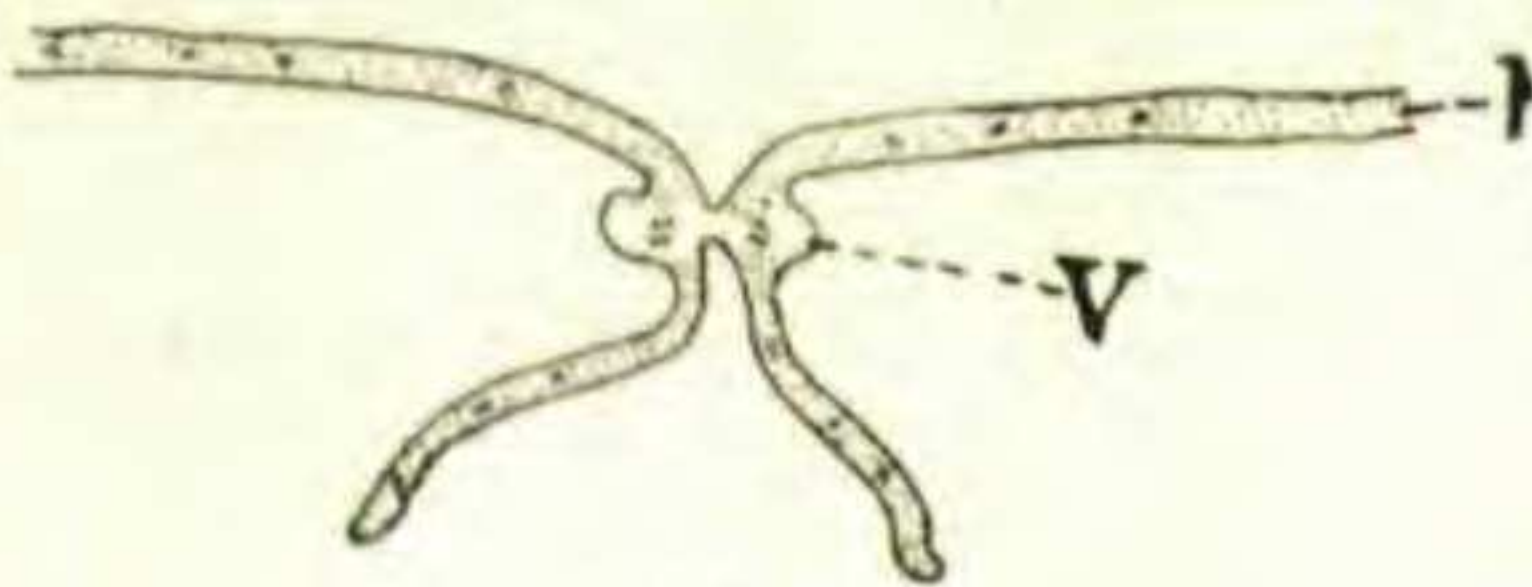


Fig. 2

The places where the young blade was split are entirely closed up. The green tissue is broken, its place being taken by collenchymatous elements.

Around the margin of the break, in each case, a vein has been organized (v, Fig. 2), from which, on the under surface of the leaf, the outgrowths in question arise. There are fifteen of these structures on the half leaf sent to me for examination. They vary

in length from a quarter inch to an inch and a half, and stand out from the surface of the lamina (1, Fig. 2) about one tenth of an inch. The longer ones are parallel to the principal veins, but others are disposed irregularly. As seen from above the position of the original wounds is shown by deep furrows.

The minute structure of the accessory lamellae is like that of the blade proper, except that palisade tissue is absent. There are stomates on the outer surfaces, and veinlets springing from the veins at the bases of the outgrowths.

Perrot has recently communicated to the Société botanique de France on account of seemingly the same phenomenon observed by him in leaves of *Aristolochia Siphon* from Melun, near Paris. In Perrot's case several leaves, all from the same shoot, however, were anomalous. In interpreting the "biological significance" of the matter Perrot says :

"It would appear that the plant, by these supernumerary productions, has sought to augment the surface of its blade in order to increase its transpiration — but under what physiological influence?"

Miss Loring's observations would seem to make the nature of the process clear. The lamellae have originated in the healing of wounds, simply, and are curious examples of regeneration of the blade.

AMES BOTANICAL LABORATORY, North Easton, Massachusetts.

ERODIUM MALACOIDES AT LAWRENCE, MASSACHUSETTS.—On July 9, 1902, while collecting plants about the mills on the north side of the Merrimac River at Lawrence, Massachusetts, I found a strange *Erodium* in a waste place, behind a foundry. Mr. M. L. Fernald has kindly identified the plant for me as *E. malacoides*, Willd. This species is a native of the Mediterranean countries, but has been collected in or about New York City by Judge Addison Brown. Its occurrence at Lawrence seems worthy of note.—ARTHUR STANLEY PEASE, Andover, Massachusetts.

LYCOPodium CLAVATUM AND ITS VARIETY.—Notes in regard to this species have been published in RHODORA by Dr. Robinson, September, 1901, Mr. Leavitt, March, 1902 and Mr. Harper, May,

¹ Bull. Soc. bot. de Fr. xlix. 163-166 (1902).